

Fig. 1

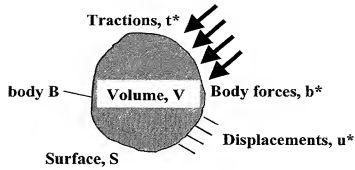


Fig. 2

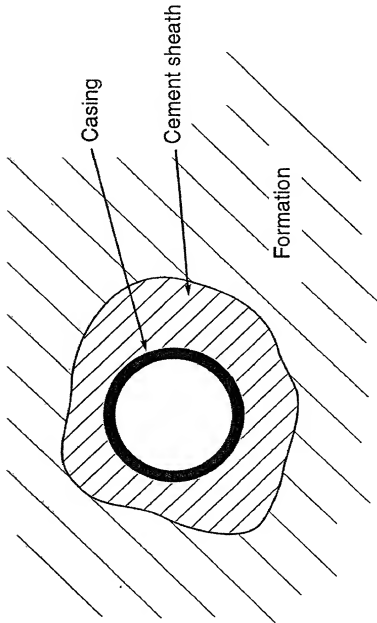


Fig. 3a

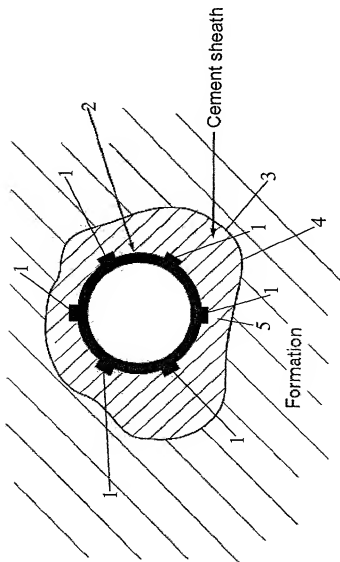


Fig. 3b

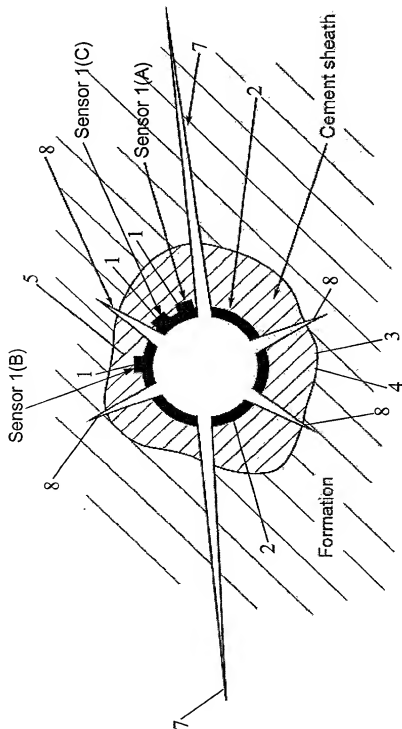


Fig. 4

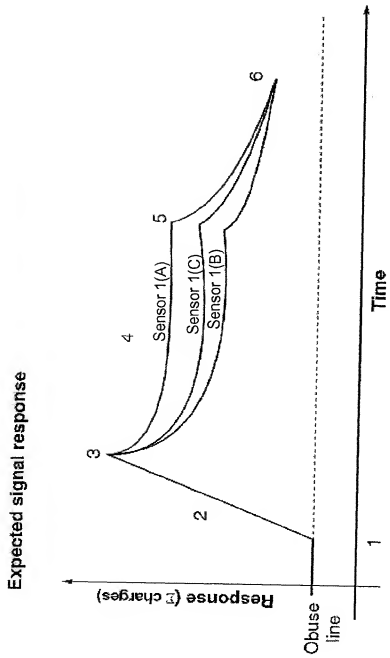


Fig. 5

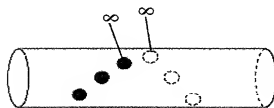


Fig. 6b

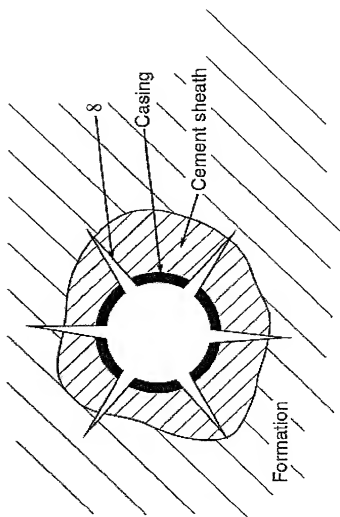


Fig. 6a

Fig. 7

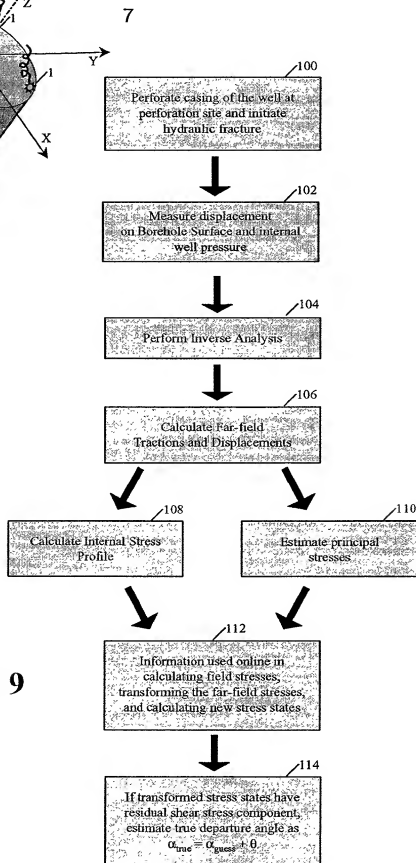
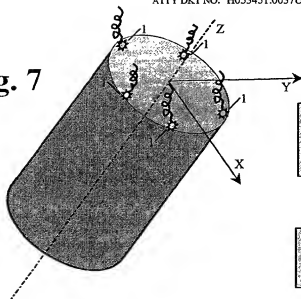


Fig. 9

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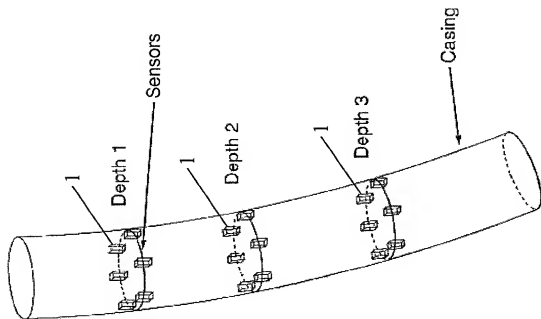


Fig. 8

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Fig. 10 Finite difference model: Radial stresses (uniform grid size)

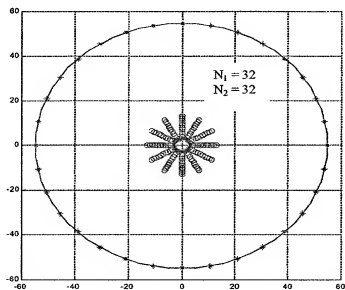
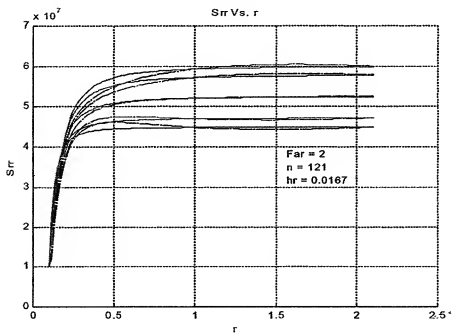


Fig. 11 Boundary elements for inclined well (without fracture)

10

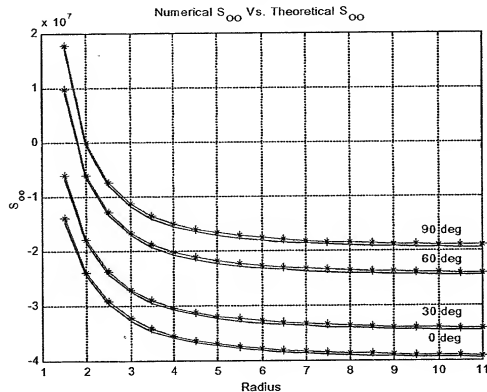
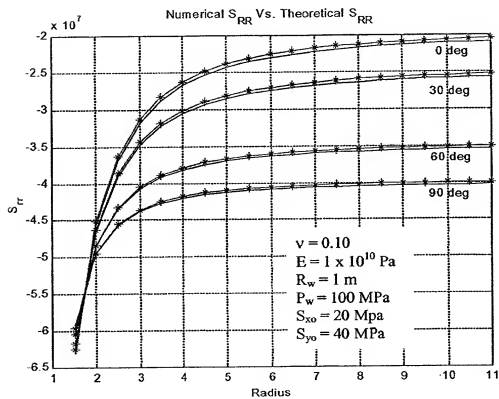


Fig. 12 Boundary Element model for inclined well: Internal stresses

11

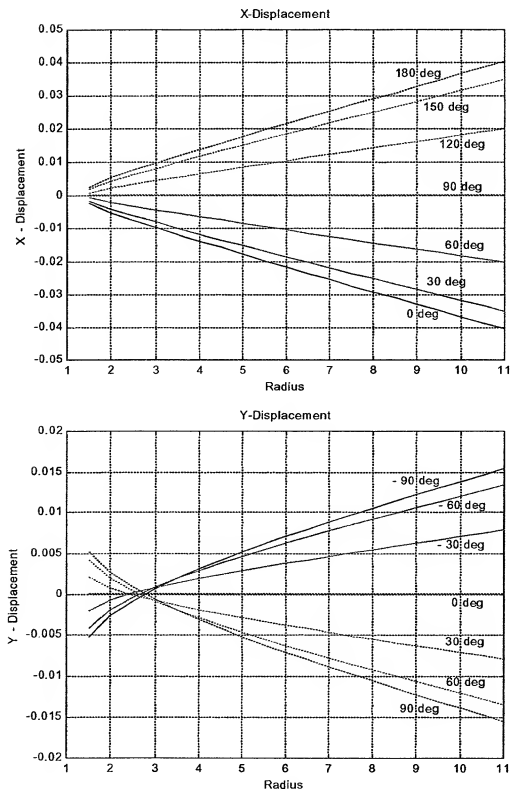


Fig. 13 Boundary Element model for inclined well: Internal displacements

12

Fig. 14 Far-field boundary solution for inclined well: Far-field stresses

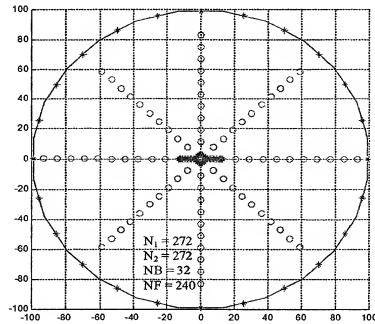
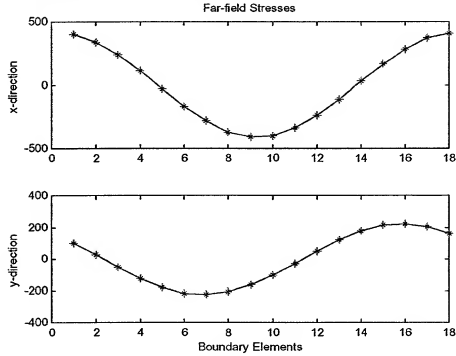


Fig. 15 Boundary elements for vertical well (with fracture)

13

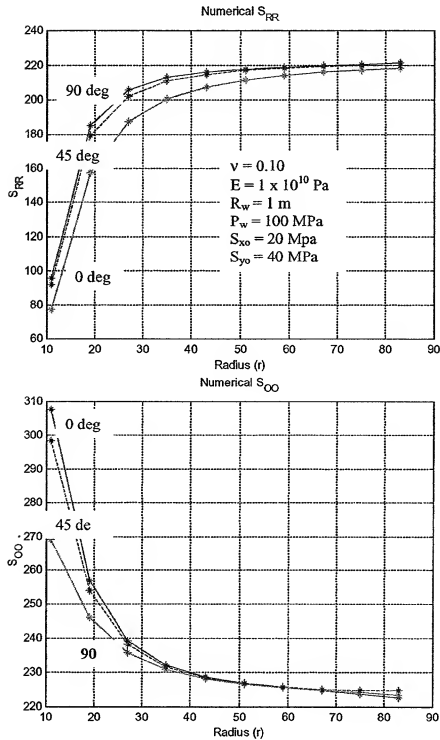


Fig. 16 Boundary Element model for vertical well with fracture: Internal stresses

14

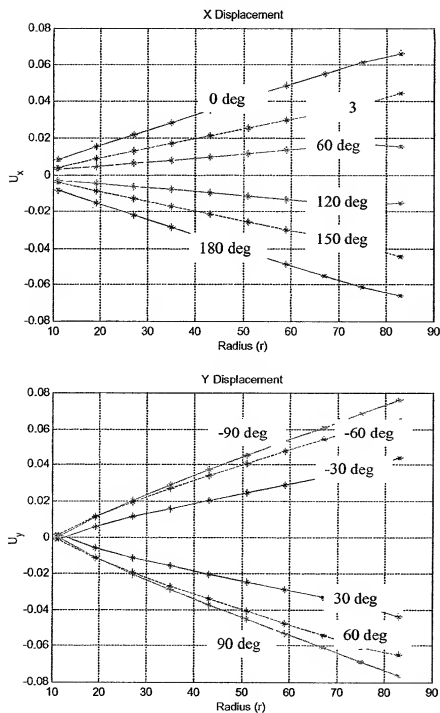


Fig. 17 Boundary Element model for vertical well with fracture: Internal displacements

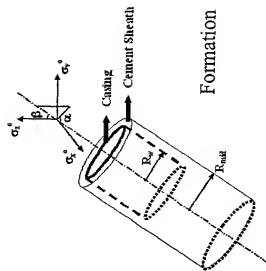


Fig. 17a

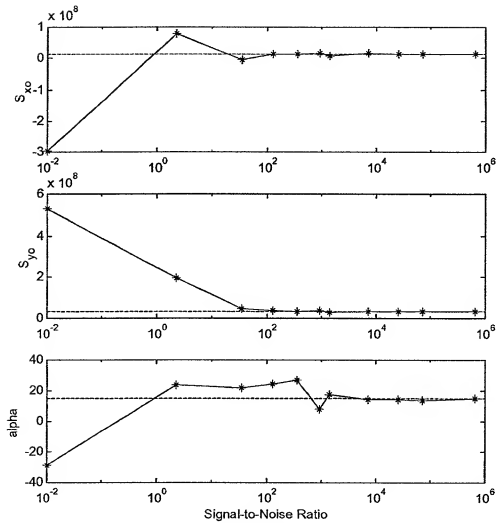


Fig. 18 Effect of noise on estimated parameters



Table I Simulation parameters

Parameter	Value
$\nu_1$	0.10
$\nu_2$	0.25
$E_1$	$1.0 \times 10^{10}$ Pa
$E_2$	$2.0 \times 10^{10}$ Pa
$R_w$	1 m
$R_{mid}$	2 m

Fig. 19A

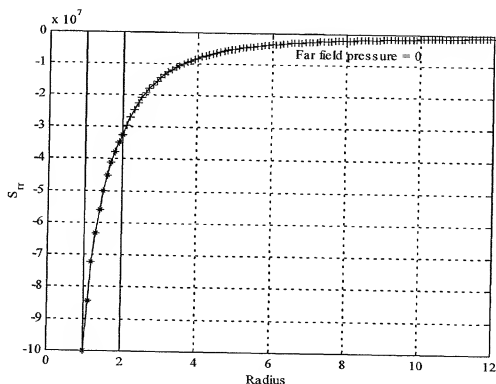


Fig. 19B Radial stress profile for one-dimensional problem

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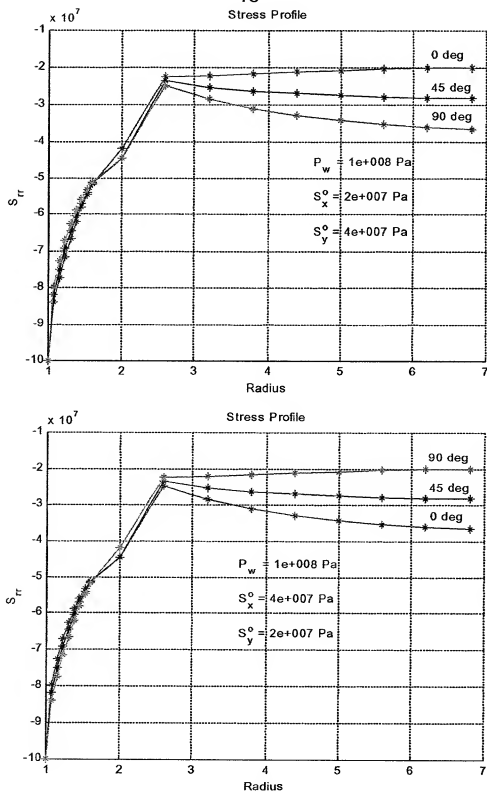


Fig. 20 Multiple zone model: Asymmetric loading

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19

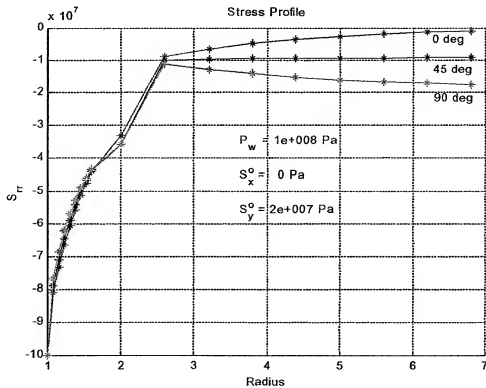
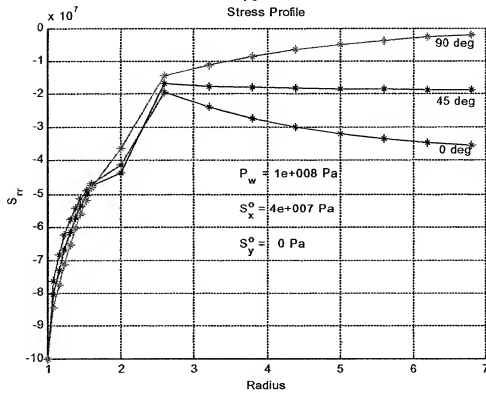


Fig. 21 Multiple zone model; uniaxial loading

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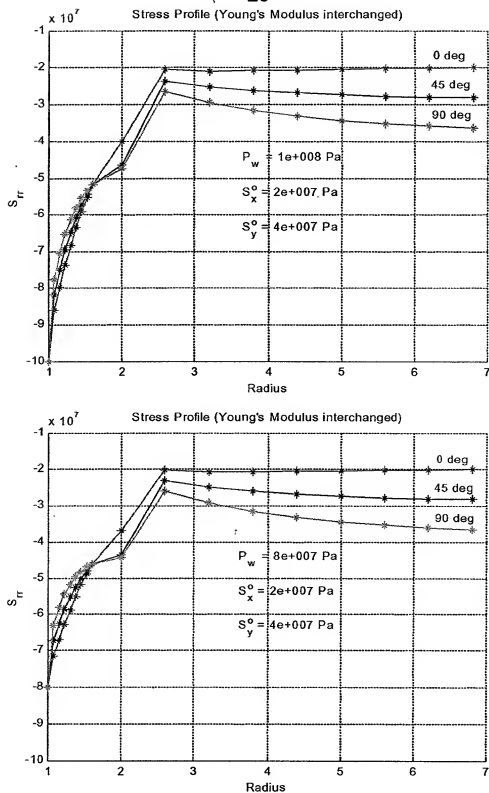


Fig. 22 Multiple zone model: Effect of Young's modulus

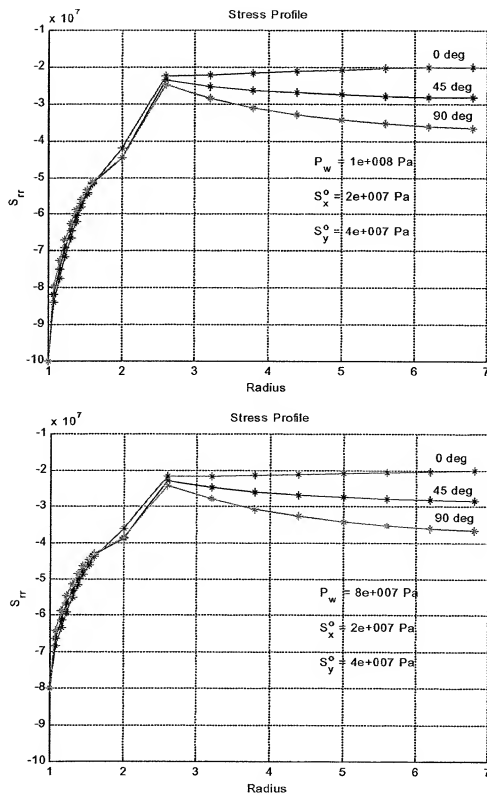


Fig. 23a Multiple zone model: Effect of internal pressure

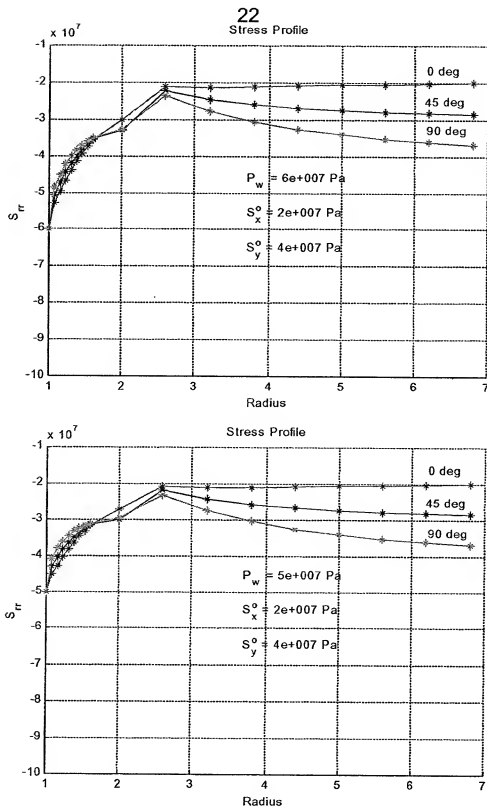


Fig. 23b Multiple zone model: Effect of internal pressure

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23

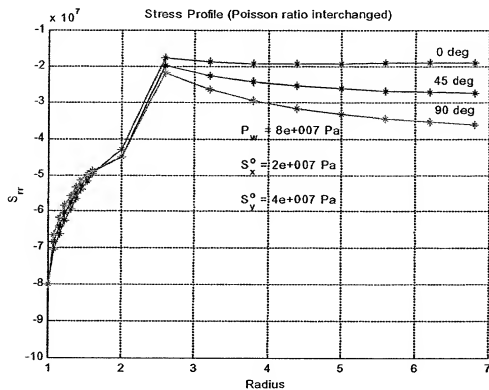
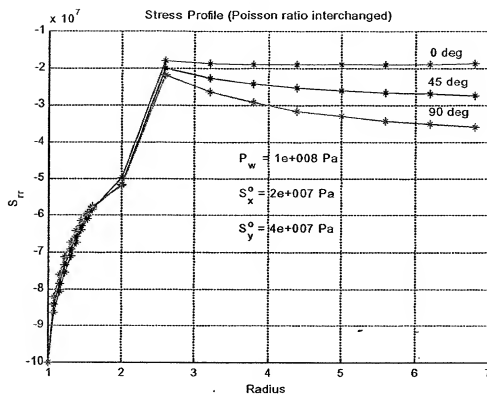


Fig. 24 Multiple zone model: Effect of Poisson ratio

24

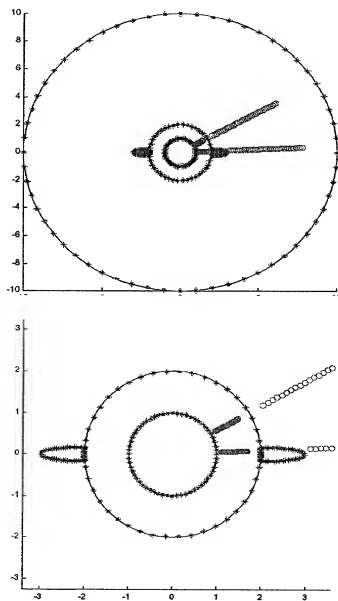
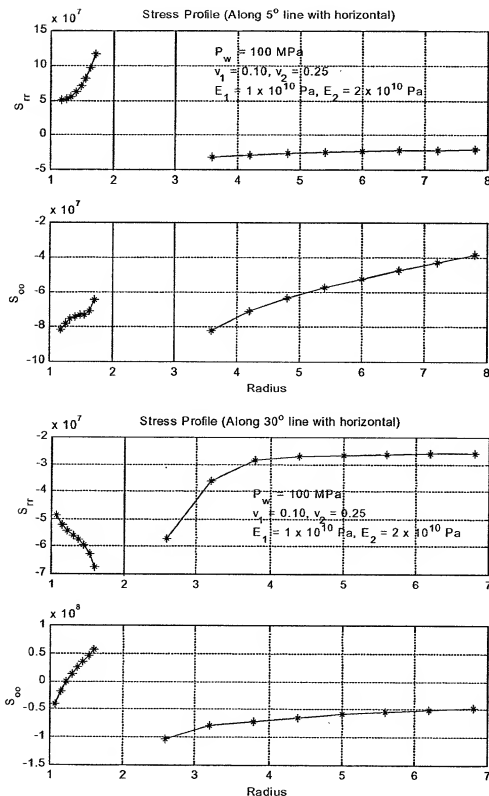


Fig. 25 Multiple zone model: Boundary elements with elliptical fracture





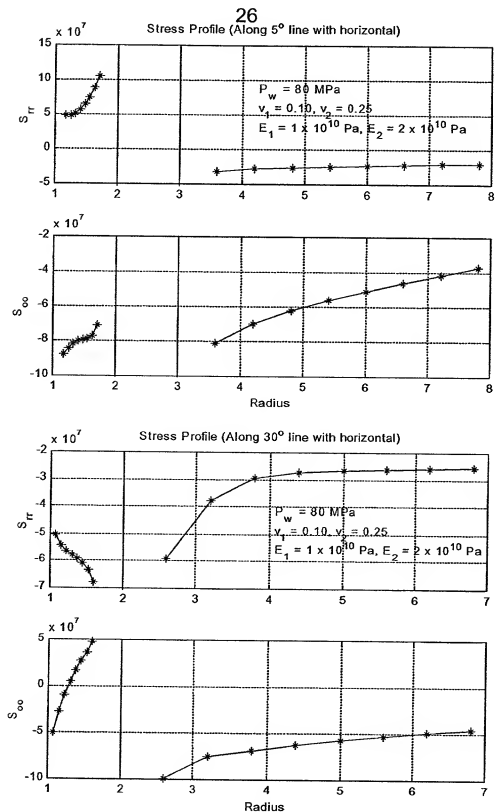


Fig. 27a Multiple zone model: Effect of fracturing pressure

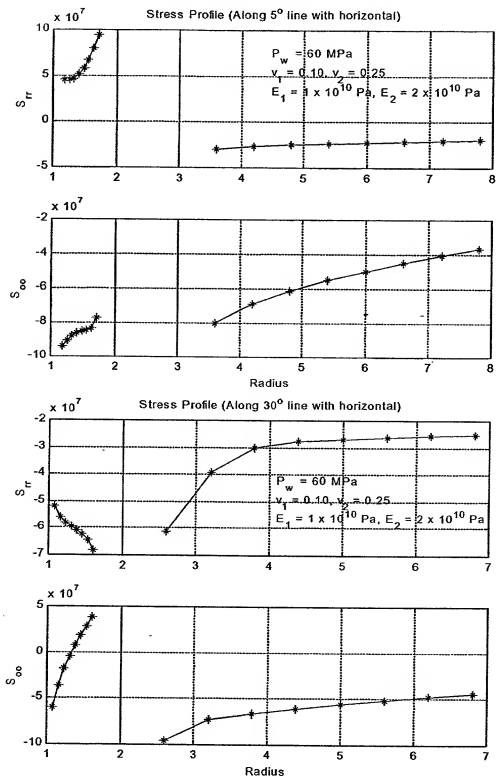


Fig. 27b Multiple zone model: Effect of fracturing pressure

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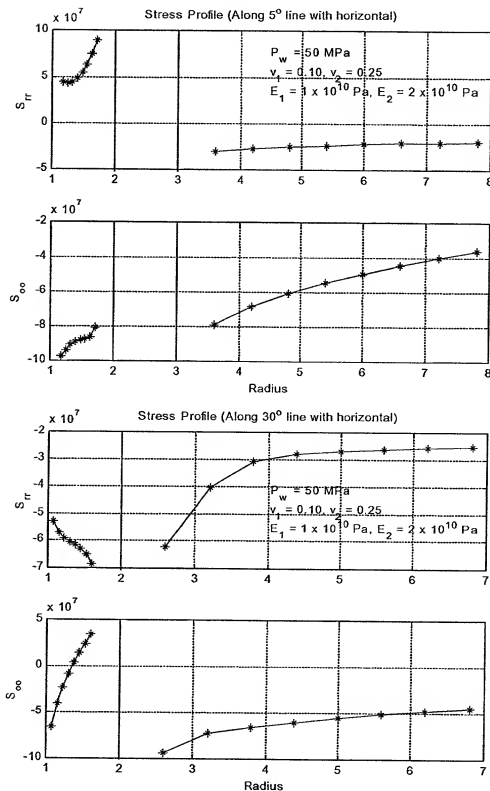


Fig. 27c Multiple zone model: Effect of fracturing pressure

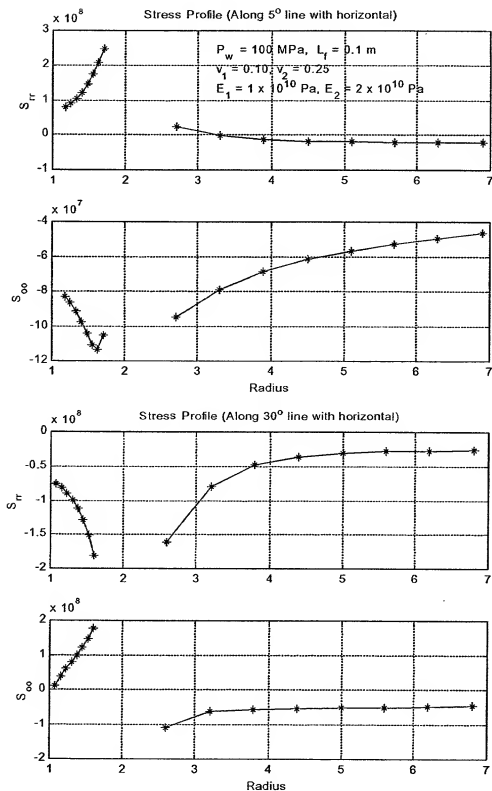
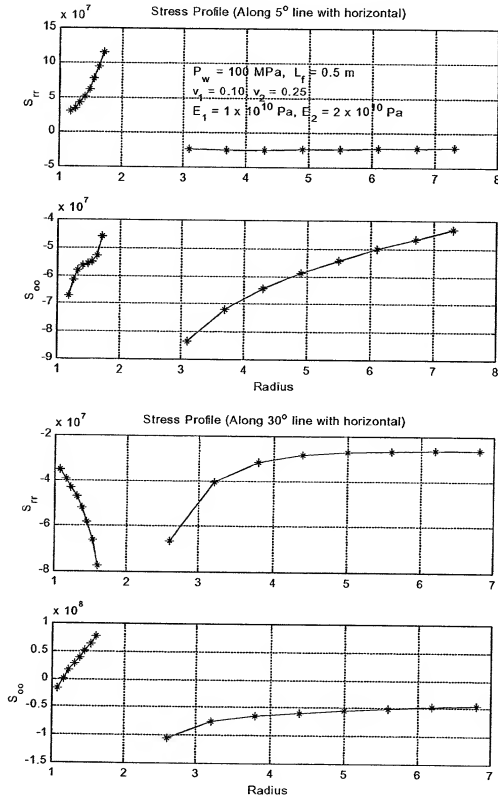


Fig. 28a Multiple zone model: Effect of fracture length

30



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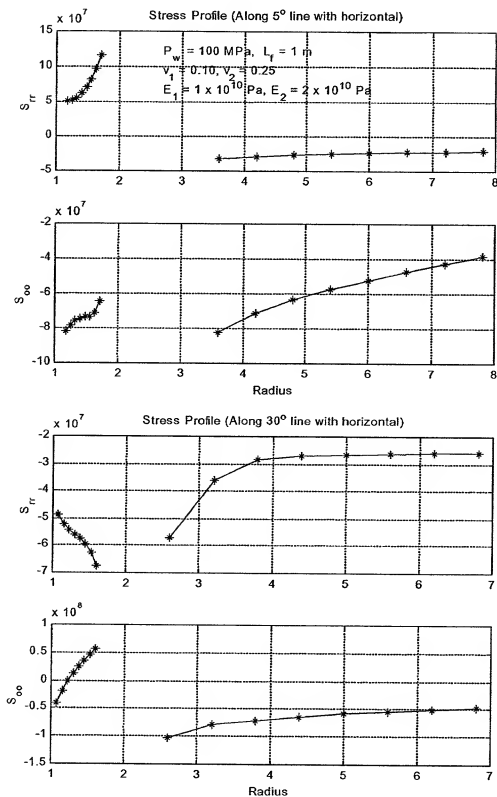


Fig. 28c Multiple zone model: Effect of fracture length

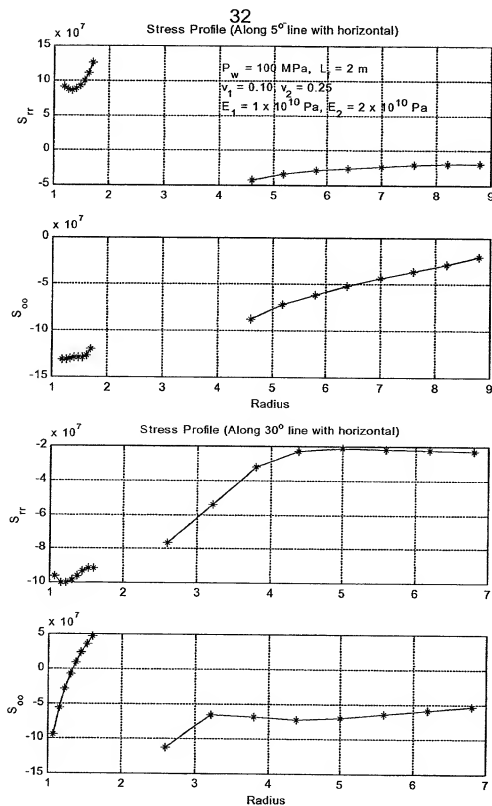


Fig. 28d Multiple zone model: Effect of fracture length



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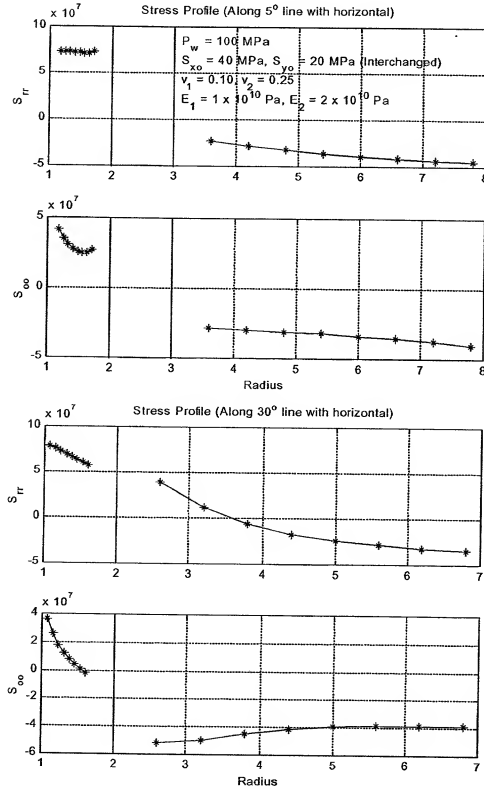


Fig. 29 Multiple zone model: Effect of far-field stress

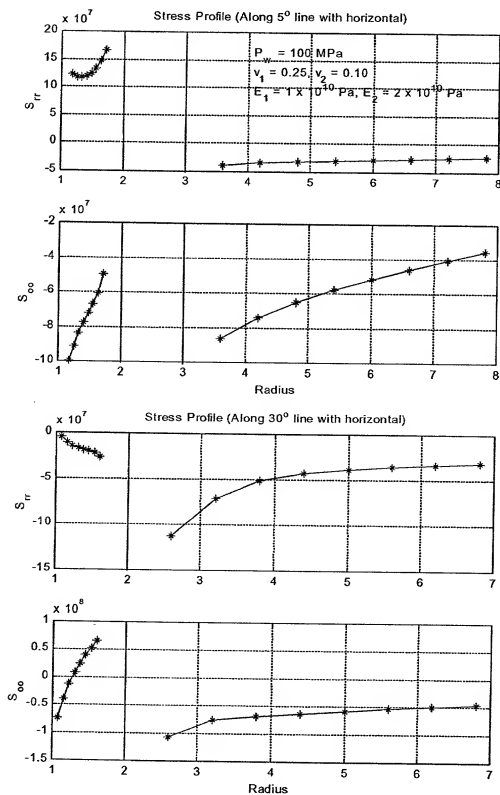


Fig. 30 Multiple zone model: Effect of poisson ratio

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